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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: M. Krysiak

Serial No.: 10/686,241 Examiner: J. Gellner

Filed: October 15, 2003 Art Unit: 3643

For: SOIL STABILIZER CARRIER Dated: October 18, 2006

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

DECLARATION OF DR. AICARDO ROA-ESPINOSA

I, Dr. Aicardo Roa-Espinosa declare as follows:

1. I have a Ph.D. in Agricultural Engineering from the University of Wisconsin – Madison from the Agricultural Engineering Department, Soil and Water Engineering where my doctoral research topic was "Collapse and Splash of Soil Peds from Single Rain Drop Impact. I have a Masters of Science Degree from the University of Wisconsin – Madison from the Agricultural Engineering Department, Soil and Water Engineering where my masters research topic was "Soil Moisture Effects on Vegetative Components, Rood Development, Kernel Quality and Yield of Corn. I have a Soil and Water engineering degree from the Universidad Nacional de Colombia, Palmira, Valle, Colombia, S.A. with a minor in agricultural economics. I am a licensed professional hydrologist in the state of Wisconsin and am a Professional Soil Scientist. My organizational affiliations

include the American Society of Biological Systems Engineers, Yahara Lakes Association (past President), and Colombia Society of Sugar Cane Technologies.

2. I have 20 years of experience in the field of soil and water engineering and science. During this time I have worked extensively researching, developing and applying all types of soil conditioners to solve problems relating to erosion control, plant establishment, water management, and soil conditioning. During this time period, I have dealt with all known forms of application of polymers and other soil conditioner to the soil. In all cases, there has remained an unsolved problem in having an effective carrier and distribution system that effectively delivers these products to the soil with ease and effectiveness.

3. I am President, CEO and founder of Soil Net, LLC. Soil Net provides innovative solutions to problems through use of polymers and other related chemistries world-wide. I serve as a technical advisor to the world's largest suppliers of polymer and related sciences.

4. I am a Visiting Professor of the Biological Systems Engineering Department University of Wisconsin-Madison.

5. I have received the following awards in recognition for my knowledge and expertise:

- International Erosion Control Association (IECA) as the best technological advance in erosion control in the last 25 years (1996, Seattle IECA meeting).
- Awarded the Sweat Hog Emblem in 2003 from the USA Marine Corps air wing 27 for defeating dust at helicopter landings
- Awarded the Distinction of Professional Merit in 1997 by the Association of Agronomy Engineers of the Valley of Cauca, during the 25-year celebration of the foundation of the association.

6. I have published numerous research articles that include the following:

2005 The Effectiveness of Polymers and Additives on Reducing Suspended Sediment Raj K. Shrestha, Anita M. Thompson* and Aicardo Roa-Espinosa
2004 Roa-Espinosa, A., and A. Mikel. PAM application for dust mitigation in helicopter operations. Internal Report: Marine Corps War Fighting Laboratory, Quantico, Virginia. Unclassified Information Paper, MWSS 273, Dust Abatement Marine Corps Project.
2003 5th International Conference on Urban Climate, Lodz, Poland; three papers on thermal impact of impervious urban areas
2002 Thermal impact analysis of Token Creek subwatershed and validation of the temperature urban model (TURM). EPA proceedings.
2001 Modeling the effect of the natural environment and urban runoff on stream temperatures
1999 Sediment and runoff control on construction sites using four application methods of a polyacrilamide mix (PAM). American Society of Agricultural Engineers, International Meeting, Toronto Canada, July 1999.
1999 Predicting sediment and phosphorus delivery with a geographic information system and a computer model. Best in category, President's award and People's choice award, Wisconsin Land Information Association conference.
1998 Roa-Espinosa A. 1998. Determination of PAM use potential in erosion control on construction sites. IN: Proceedings of first international-regional conference on environmental-water: Innovative issues in irrigation and drainage. Lisbon Portugal. September 16-19, 1998.

7. I have reviewed the application of the present invention.

8. I have reviewed the Horne patent, 2,765,291; Hamilton patent, 5,456,733 and the Green reference.

9. Horne relates to introducing chemical agents into the soil through a less active substance known as an extender, which in the case of the invention is pumice. Further according to Horne, pumice is substantially inert chemically. Pumice has the beneficial effect on the soil's physical environment of improved

moisture absorption and transport, and retention of air by soil when temporarily flooded. However, Horne, i.e. the pumice rock, does not serve as a soil conditioner because function is not to improve the chemical properties and/or biological activity of the soil.

10. Horne does not teach an agglomerated solid carrier as claimed in the present invention. Pumice, as described in Horne, is derived from a size reduction process where a larger particle is crushed and/or reduced in size in a fashion that results in a finer particle. Pumice rock is not an agglomerated carrier.

11. Hamilton teaches pelletization of a fibrous material so as to have a granular mulch. The claims of the present invention are not obvious over Horne in view of Hamilton. Horne teaches pumice rock as a solid carrier. Therefore, being at least one of skill in the art of the art that is taught in the above patent application, it is not obvious to combine the pelletization method of Hamilton with the pumice rock of Horne to teach the claims of the present invention.

12. I hereby declare that all of the statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the patent application to which it relates or any patent issued thereon.

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Dated: 10-28-06

Dr. Alcardo Roa-Espinosa